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09/955,761	09/18/2001	Gregory W. Gale	A-69853/HCH	9831

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FLEHR HOHBACH TEST ALBRITTON & HERBERT LLP
FOUR EMBARCADERO CENTER
SUITE 3400
SAN FRANCISCO, CA 94111-4187

EXAMINER
HUG, ERIC J

ART UNIT	PAPER NUMBER
1731	

DATE MAILED: 01/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/955,761	Applicant(s) GALE ET AL.	
	Examiner Eric Hug	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 September 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-8,14-19,22 and 25-27* is/are rejected.

7)☒ Claim(s) *4,5,9-13,20,21,23 and 24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 2, 14-16, 19, 25, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Emery (US 2,746,358). Emery discloses a pulp molding apparatus having a rotating assembly of forming dies and an assembly of mating pressing/drying dies. A forming turret comprises radially disposed arms each holding a pulp forming die. The assembly is mounted for rotation and is arranged above a trough of pulp slurry through which the forming dies pass. As a forming die is immersed in the slurry, a layer of pulp will deposit onto the forming die by means of an applied suction. At the moment the forming die is in the slurry, it is facing downward from the arm that supports it. The forming die with the deposited pulp layer rotates out of the trough with vacuum still applied, thereby draining the water. The forming die rotates 180 degrees at which point it mates to a transfer die for transferring the pulp layer from the forming die to a pressing/drying die mounted on an adjacent turret assembly. At the moment the forming die is in contact with the transfer die, it is facing upward from the arm that supports it. The transfer die then transfers the pulp layer to a pressing die. Pressing dies may have suitable sources of heat and suction for driving off the liquid from the pulp mass. The reference reads on the claims as follows:

Claim 1: The apparatus has a dip tank (trough) containing a fiber slurry, a platen (arm) which carries a porous mold (forming die), a means for moving the arm and forming die together downward into the slurry (via the rotating assembly) with the end of the arm disposed upwardly of the forming die, a vacuum applied while the mold is in the slurry for depositing fibers onto the mold, means for moving the arm forming die upwardly out of the fiber slurry (via the rotating assembly) to allow water to drain from the pulp product (pulp layer).

Claim 2: As the arm and forming die are moved upwardly out of the fiber slurry through rotation of the assembly, the forming die faces upwardly with respect to the end of the arm as it reaches the transfer die at the top of the rotation.

Claims 14-16, 19: A pulp molded product is made by introducing a porous mold (forming die) carried by a platen (end of the arm) into a container of fiber slurry by moving the forming die downwardly (via rotation) with the end of the arm disposed upwardly of the forming die, depositing fibers onto the forming die with an applied vacuum while the forming die is in the slurry, withdrawing the forming die from the slurry upwardly out of the fiber slurry (via rotation) with the arm underlying the forming die and with suction still applied to the forming die, thus allowing water to drain from the formed pulp product, then transferring the product from the forming die to a transfer die (which mates with the forming die), and then transferring the product from the transfer die to a separate drying die.

Claims 25, 27: The pulp products formed using the apparatus of Emery are of tapered shaped (see shape of molds in the figures), thus the products are suitable for stacking (nesting) and unstacking (de-nesting). The products have a shape corresponding the mold surfaces of the forming dies, transfer dies, and pressing/heating dies.

2. Claims 1, 2, 14-16, 19, 25, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Daniele (US 3,016,091). Daniele discloses a vacuum control system for a pulp molding machine. The described machine is one of a well known type for producing molded pulp articles such as dishes, flower pots, and other types of container. The machine comprises suction molds mounted on hollow spokes which rotate to advance the molds through a vat of pulp slurry. Vacuum is applied as the molds travel downward into the pulp to deposit fibers onto the molds and as they travel upwardly out of the pulp for draining excess water from the mold and the molded pulp articles. As seen in the figures, the suction molds are mounted downward with respect to flanges at the ends of the hollow spokes as the molds travel through the slurry, and are mounted upwardly with respect to the flanges as they rotate upwardly out of the slurry 180 degrees towards transfer dies mounted above. The transfer dies removes the pulp products from the suction molds and carries the pulp products to a conveyor belt for further drying. The reference reads on the claims as follows:

Claim 1: The apparatus has a dip tank (vat) containing a fiber slurry, a platen (flange on the hollow spoke) which carries a porous mold (suction mold), a means for moving the flange and suction mold together downward into the slurry (via the rotating assembly) with the flange disposed upwardly of the suction mold, a vacuum applied while the suction mold is in the slurry for depositing fibers onto the suction mold, means for moving the flange and suction mold upwardly out of the fiber slurry (via the rotating assembly) to allow water to drain from the pulp product formed on the suction mold.

Claim 2: As the suction molds are moved upwardly out of the fiber slurry through rotation of the assembly, the molds face upwardly with respect to the flanges on the hollow spokes as they reach the transfer dies at the top of the rotation.

Claims 14-16, 19: A pulp molded product is made by introducing a porous mold (suction mold) carried by a platen (flange) into a container of fiber slurry by moving the suction mold downwardly (via rotation) with the flange disposed upwardly of the suction mold, depositing fibers onto the suction mold with an applied vacuum while the suction mold is in the slurry, withdrawing the suction mold from the slurry upwardly out of the fiber slurry (via rotation) with the flange underlying the suction mold and with suction still applied to the suction mold, thus allowing water to drain from the formed pulp product, then transferring the product from the forming die to a transfer die (which mates with the forming die), and then transferring the product from the transfer die to a conveyor belt.

Claims 25, 27: The pulp products formed using the apparatus described by Daniele are of tapered shaped (see shape of mold in the figures), thus they are suitable for stacking (nesting) and unstacking (de-nesting). The products have a shape corresponding the mold surfaces of the suction mold and transfer die.

3. Claims 1-3, 14-19, 22, and 25-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Hornbostel et al (US 3,850,793). Hornbostel discloses a molding machine for producing uniform pulp products. A perforate mold for forming the pulp product is attached to a rigid casting at the end of a hollow rotating arm. The mold is immersed facing downward into a pulp slurry. A vacuum which communicates with the hollow portion of the rotating arm draws the

pulp from the slurry to the surface of the mold. After the part has been formed on the mold, the mold is carried by the rotating arm to a press mold, which is lowered and mated to the mold, thereby compressing the molded part to a final desired thickness. Thereafter, the part is ejected from the mold and carried away to be dried in an oven. The reference reads on the claims as follows:

Claim 1: The apparatus has a tank containing a fiber slurry, a platen (rigid casting at the end of the hollow rotating arm) which carries a porous mold, a means for moving the arm and mold together downward into the slurry (via the rotating assembly) with the rigid casting of the arm disposed upwardly of the mold, a vacuum applied while the mold is in the slurry for depositing fibers onto the suction mold, means for moving the arm and mold upwardly out of the fiber slurry (via the rotating assembly) to allow water to drain from the pulp product formed on the mold.

Claim 2: As the mold moves upwardly out of the fiber slurry through rotation of the assembly, the mold faces upwardly with respect to the end of the rotating arm as it reaches the area of the press mold after 180 degree rotation.

Claim 3: The apparatus advances the wet pressed pulp product to a dry chamber (oven).

Claims 14-16, 19: A pulp molded product is made by introducing a perforate mold carried by a rigid casting at the end of a hollow rotating arm into a fiber slurry. The arm is rotated such that the rigid casting faces upwardly of the mold when the mold enters the slurry. Fibers are deposited onto the mold with an applied vacuum. Then the mold is withdrawn upwardly out of the fiber slurry (via rotation) with the rigid casting underlying the mold and with suction still being applied to the mold, thus allowing water to drain from the formed pulp

product. Then the mold mates with a press die, and then the pressed product is transferred to an oven.

Claims 17-18: Excess water that is separated from the fibers during the forming stage is sent to a separator tank, and periodically recycled. Bleed ports are also provided for venting excess moisture from the mold and molded product. See column 3, lines 55-65, and column 7, lines 20-44.

Claims 25-27: Hornbostel teaches making pulp products such as dashboards using a forming mold and press mold of desired shape, resulting in products with both surfaces corresponding to the shape of the two molds. The pulp products are formed having a well-controlled thickness and uniform density (see column 4, lines 8-55). The molds are of tapered shaped (see shape of the molds in the figures), thus they are suitable for stacking (nesting) and unstacking (de-nesting).

Claim 22: The portion of the arm (rigid casting) supporting the forming mold is not immersed into the slurry.

4. Claims 1-3, 6-8, 14-19, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Morris (US 1,880,458). Morris discloses a method of manufacturing pulp articles into a predetermined shape utilizing suction, pressure, and heat. A suction chamber S facing downward (Figure 1) is depressed into a tank of pulp slurry. Suction causes a layer of pulp to adhere to the wire mesh of the suction chamber. The chamber with the adhering pulp is then raised out of the slurry tank facing upwards (as in Figures 2 and 3) so that surplus water can drop out of the suction chamber. Suction is provided simultaneously. The suction chamber is then

moved into a compression chamber B, where pressurized air and heat is supplied. The suction chamber is moved into the aforementioned positions via an assembly of pivoting links and lever arms. The reference reads on the claims as follows:

Claim 1: The apparatus has a tank containing a fiber slurry, a porous mold (mesh) within a suction chamber S mounted on a series of pivoting levers, a means for moving the suction chamber downward into the slurry (via pivoting links) with the supporting levers and base of the suction chamber facing upwardly of the porous mesh, a vacuum applied while the mesh faces downward into the slurry for depositing fibers onto the mesh, means for moving the levers and suction chamber upwardly out of the fiber slurry (via the pivoting links) to allow water to drain from the pulp product formed on the suction chamber.

Claim 2: As the suction chamber moves upwardly out of the fiber slurry, the mesh faces upwardly with respect to the levers and the base of the suction chamber after 180 degree rotation.

Claim 3: The apparatus advances the wet pressed pulp product to a heated compressed air chamber.

Claim 6: Vacuum may be applied to the molded part while in the drying chamber (compression chamber).

Claim 7: The slurry tank is connected to a frame and has an opening facing upward. The dry tank (compression chamber) faces downward above the slurry tank. The levers can be moved to position the suction chamber directly above the tank (Figure 1), directly below the compression chamber (Figure 2), or in an intermediate position (Figure 3).

Claim 8: The movement of the levers allows for a 180 degree rotation of the suction chamber.

Claims 14-16, 19: A pulp molded product is made by introducing a suction chamber carried by levers into a fiber slurry. The levers are pivoted such that they face upwardly of the suction chamber when the suction chamber enters the slurry. Fibers are deposited onto the suction chamber with an applied vacuum. Then the suction chamber is withdrawn upwardly out of the fiber slurry (via pivoting links) with the levers underlying the suction chamber and with suction still being applied to the suction chamber, thus allowing water to drain from the formed pulp product. Then the suction chamber mates with a heated compression chamber.

Claims 17-18: Surplus water that is separated from the fibers during the forming stage is sent back to the slurry tank. Before drying the pulp product in the compression chamber, suction is applied for a sufficient period of time so that the molded part is rigid enough to withstand the pressures in the compression chamber (see page 3, second column, lines 99-121). This is equivalent to venting off excess moisture from the molded part for a predetermined time to reach a desired dryness.

Claim 22: The portion of the suction chamber supporting the mesh is not immersed into the slurry.

5. Claims 1-3, 6, 14-16, 19, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Chaplin (US 1,880,458). Chaplin discloses a molded pulp apparatus comprising a porous forming die immersed facing downward into a tank of pulp, suction for drawing fibers to the surface of the forming die, a means for raising the forming die out of the slurry and rotating the forming die so it faces upwards and drains the water, and a heating die connected to a drying chamber disposed above the forming die. After fibers have been deposited on the forming die,

the die is raised from the tank and inverted, and suction is maintained for drawing off any remaining water. The forming die is then raised to the heating die, which is mated to the forming die, and thereby compresses and compacts the molded part. Suction is maintained on the forming die during the heating step (column 4, lines 36-52). The reference reads on the claims as follows:

Claim 1: The apparatus has a tank containing a fiber slurry, a porous mold (forming die) mounted on a holder (5), a means for moving the forming die downward into the slurry with the holder facing upwardly of the porous forming die, a vacuum applied while the forming die faces downward for depositing fibers onto the forming die, and means for moving and inverting the forming die upwardly out of the fiber slurry to allow water to drain from the pulp product formed on the forming die.

Claim 2: As the forming die moves upwardly out of the fiber slurry, it faces upwardly with respect to the holder after 180 degree rotation.

Claim 3: The forming die advances the wet pressed pulp product to a heated compression die.

Claim 6: Vacuum is applied to the molded part while in the drying die.

Claims 14-16, 19: A pulp molded product is made by introducing a forming die into a fiber slurry. A supporting holder is rotating such that it faces upwardly of the forming die when the forming die enters the slurry. Fibers are deposited onto the forming die with an applied vacuum. Then the forming die is withdrawn upwardly out of the fiber slurry with the holder underlying the forming die and with suction still being applied, thus allowing water to drain from the formed pulp product. Then the forming die mates with a heated compression die.

Claim 22: The portion of the forming die comprising the holder is not immersed into the slurry.

Allowable Subject Matter

Claims 4, 5, 9-13, 20, 21, 23, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 4, 5 and 9-13 are allowable because the prior art does not disclose or suggest an apparatus for producing a molded pulp product comprising a second mating mold disposed within a drying chamber whereby the apparatus further comprises a means for mating the second mold with the first porous mold, means for transferring the molded part from the first porous mold to the second mold and for carrying the part on the second mold into the drying chamber, and means for sealing the drying chamber after the part has been transferred to the second mold and moved into the drying chamber.

Claims 20, 21, 23, and 24 are allowable because the prior art does not disclose or suggest a method of producing of molded pulp product comprising having a second mold in a drying chamber whereby the second mold mates with the first porous mold in the drying chamber, the molded part is transferred to the second mold, the first mold is withdrawn from the drying chamber, and then the drying chamber is sealed to dry the molded part.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lee (US 6,245,199) disclose a pulp forming machine comprising a lower rotating forming mold which faces downwards into a pulp slurry when forming a pulp product and faces upwards when mated with an upper press mold. The pulp slurry and upper press mold move up and down to accommodate the lower forming mold, which does not translate in any direction.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 703 308-1980. The examiner can normally be reached on Monday through Friday, 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and 703 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0651.

STEVEN P. GRIFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

jeh
January 7, 2003